



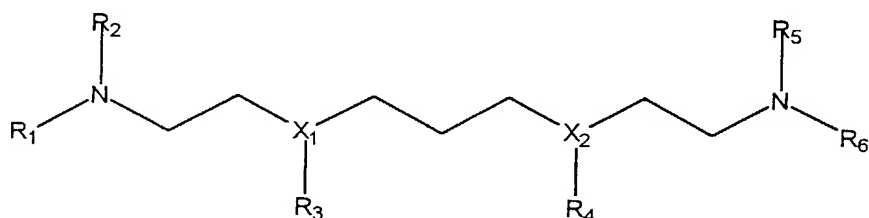
Serial No. 10/017,235 - Murphy - Abstract

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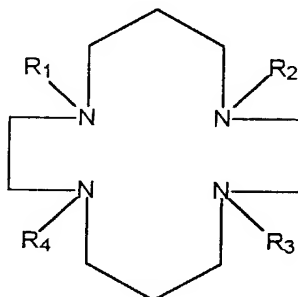
ABSTRACT (Once Amended)

The invention relates to the preparation of novel polyamines, such as derivatives of 1,3-bis-[(2'-aminoethyl)-amino]propane (2,3,2-tetramine) and 1,4,8,11-tetraazacyclotetradecane (cyclam), which can be used to treat mitochondrial and degenerative diseases.

Accordingly, in one aspect the invention is directed to compounds of the formula:



or



wherein

$R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  may be the same or different and are hydrogen, alkyl, aryl, cycloalkyl, amino acid, glutathione, urate, ascorbate, estrogen, dehydroepiandrosterone, redox stabilizing substituents, a quinone, glutamate, succinate,  $-(CH_2)_n[XCH_2]_nNH_2$  - wherein  $n = 3-6$  and  $X =$  nitrogen, sulfur, phosphorous or carbon, or heterocycle wherein  $R_1$  to  $R_6$  taken together are  $-(CH_2XCH_2)_n$ - wherein  $n = 3-6$  and  $X =$  nitrogen, sulfur, phosphorous or carbon.

$M$ ,  $n$ , and  $p$  may be the same or different and are bridging groups of variable length from 3-12 carbons.

$X_1$  and  $X_2$  may be the same or different and are nitrogen, sulfur, phosphorous or carbon.